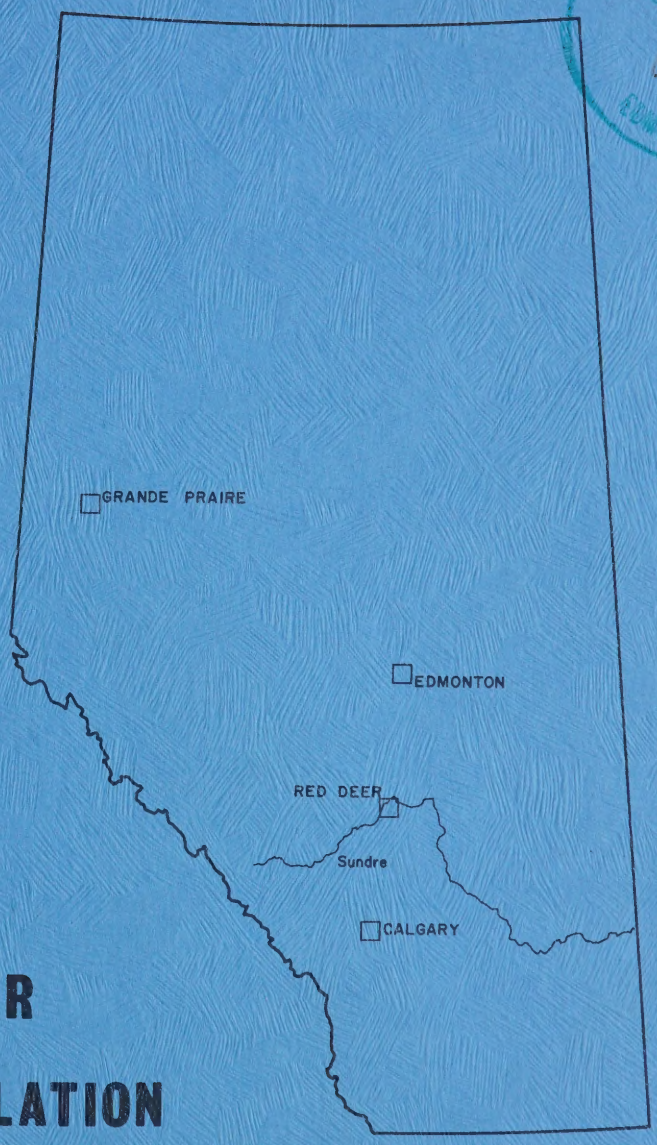
SHELVE UNDER:

ALTA. DEPT. OF THE ENVIRONMENT.
Red Deer river flow regulation studies.

CA2ALEN75
73R22

CA2 ALEN 75 1973R22
Red Deer River Flow Regulation Proposal.
June 1973. 1
3 3398 00133 4621

LEGISLATIVE
AUG 7 1975
EDMONTON

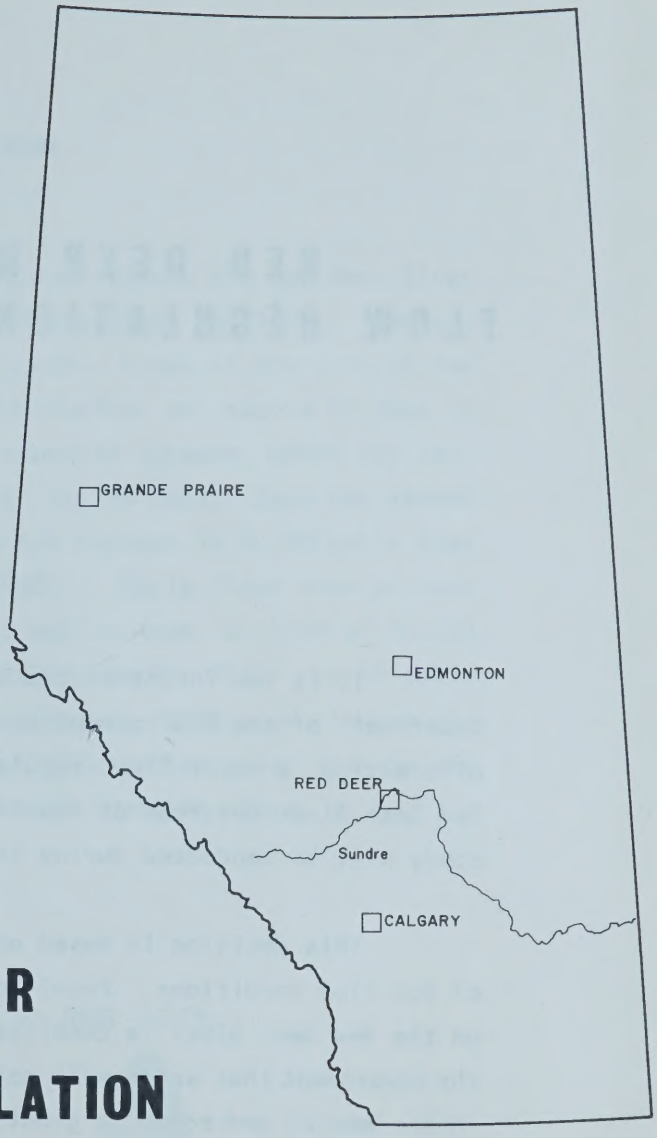


RED DEER RIVER FLOW REGULATION PROPOSAL

LIBRARY
VAULT 19

Alberta
ENVIRONMENT

Digitized by the Internet Archive
in 2026 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library



RED DEER RIVER FLOW REGULATION PROPOSAL

Alberta
ENVIRONMENT

10040-104 th Street, EDMONTON, ALBERTA

JUNE, 1973

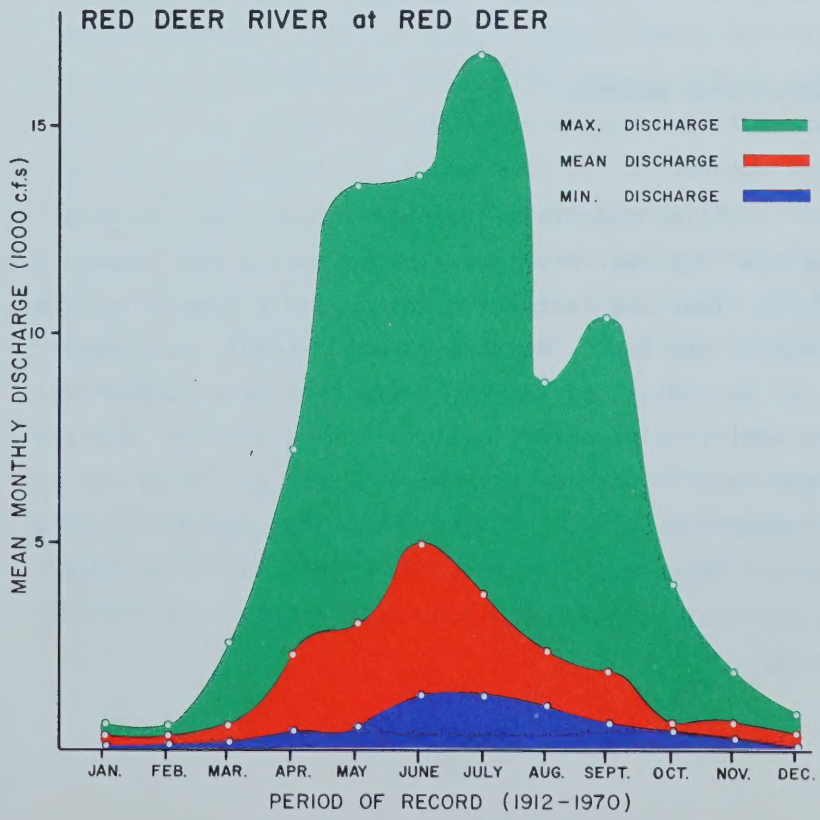
RED DEER RIVER
FLOW REGULATION PROPOSAL

It is the intent of the Government of Alberta, Department of the Environment to study the feasibility of creating a major flow regulation structure on the Red Deer River upstream of the City of Red Deer. The study will be conducted during the next several months.

This decision is based on concern over results of low flow conditions. Provision of controlled flows on the Red Deer River is consistent with the policy of the Government that water will not be a limiting factor in the social and economic growth of the Province. It is also consistent with the goal of encouraging and stimulating economic growth in the smaller urban centres by decentralizing industry and population.

BACKGROUND INFORMATION

Under present conditions, the Red Deer River is subject to wide fluctuations in flows. For example, average mean monthly flows at the City of Red Deer vary from 4900 cubic feet per second in June to 300 cubic feet per second in January, while the lowest monthly average is 96 cubic feet per second (December, 1936) and the highest is 16,700 cubic feet per second (July, 1915). Daily flows show an even greater variation, ranging from a high of 56,000 cubic feet per second (June 27, 1915) to 64 cubic feet per second (December 7, 1922). Low flow conditions contribute to deteriorated water quality and may restrict withdrawals from the river.



Although current withdrawals are not excessive, the Red Deer River does serve as an important source of municipal and industrial water. The City of Red Deer withdraws some 4 to 6 cubic feet per second for municipal purposes. While 6 cubic feet per second represents only 10 percent of the lowest recorded daily discharge, greater excess of flows over withdrawals is desirable.

Limitations on water supplies may be a locational factor by major water using industries. An average packing plant in Alberta withdraws 1 cubic foot per second daily while a major chemical plant may require up to 60 cubic feet per second. A 100 megawatt thermal electric plant would withdraw approximately 80 cubic feet per second. With uncontrolled flows withdrawals for major industrial and municipal expansion cannot be guaranteed.

ANTICIPATED BENEFITS

Major benefit of a flow regulation reservoir on the Red Deer River will be to ensure that water is not a limiting factor in the economic growth of the City of Red Deer. An assured water supply is an essential ingredient of the infrastructure of any community. An additional benefit will be improved water quality both locally and downstream, since the Province is committed to maintaining specified water quality criteria on all streams. The Red Deer River, being an interprovincial stream must also meet interprovincial commitments.

A reservoir will also provide the opportunity to create a major recreational development if associated facilities are provided. The reach of the river under consideration is stratigically located near three of Alberta's larger cities. The region is already a major recreation area, with existing facilities being heavily utilized.

Existing access is excellent to serve both residents of the Province and tourists travelling Highway 2 or the David Thompson Highway.

CONCEPT OF THE PROPOSAL

Previous studies have indicated eight potential storage sites on the Red Deer River between Red Deer and an area 60 miles upstream. The size of the potential reservoirs vary from 40,000 acre-feet (1400 acres surface area) to 250,000 acre-feet (7900 acres surface area). All of the reservoir sites in this reach of river could be filled 100 percent of the time by the average summer flow as well as the minimum recorded summer flow. Reservoir sites in this area could increase the flows at Red Deer City 28 to 190 percent based on mean flows November to March. The estimated range of costs are between 15 and 20 million dollars.

There should be limited conflict for recreation use as the main purpose of the reservoir will be controlled release for flow improvement during the low flow winter months.

To ensure that all aspects of development are considered during the feasibility study, a multi-agency approach will be taken. A wide range of disciplines will be involved in the analysis and in preparing recommendations. Studies will be conducted to establish the physical, ecologic and economic feasibility of the proposal.

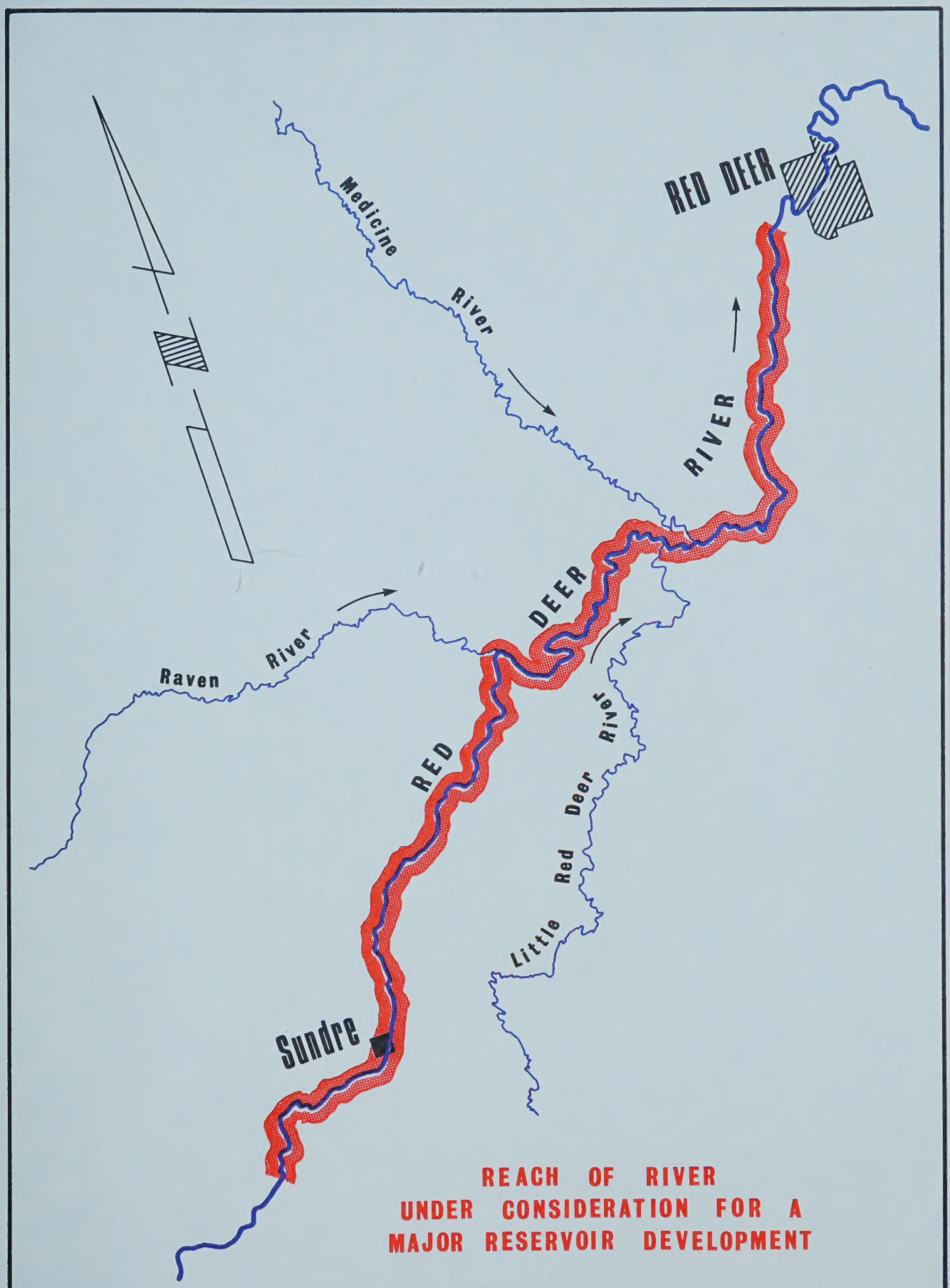
Once a firm proposal has been formulated, an environmental impact study will be completed to assess the full environmental implications of a flow regulation reservoir on the Red Deer River. When all costs and benefits, both economic and social have been identified, a benefit-cost analysis study will be undertaken.

It is the policy of the Government prior to approving any major water resource management project, that full public hearings be conducted. Results of the feasibility study, the environmental impact assessment and the benefit-cost analysis will be presented in order that all Albertans can be fully informed, and that any modifications to the proposal can be incorporated.

If, after full consideration, the proposal is considered to be feasible, the Department will introduce enabling legislation to gain governmental approval, and to provide funds for development.

For further information please contact:

DEPARTMENT OF THE ENVIRONMENT
ENVIRONMENTAL PLANNING AND RESEARCH SERVICES
Planning Division
10040 - 104 th Street, Edmonton, Alberta T5J 0Z6



REACH OF RIVER
UNDER CONSIDERATION FOR A
MAJOR RESERVOIR DEVELOPMENT

E.C.A. INFORMATION CENTERS

BLACKFALDS
Village Office,
BLACKFALDS, Alberta.
885-4677

BOWDEN
Bowden Public Library,
BOWDEN, Alberta.
224-3892

CALGARY
Environmental Design Area,
Original Library Bldg.,
Univ. of Calgary Library,
Univ. of Calgary,
CALGARY, Alberta.
Attention: Library
284-6828

Calgary Regional
Planning Commission
339 - 58 Avenue S.E.,
CALGARY, Alberta.
Attention: Library
452-8147

Bureau of Public Affairs,
J.J. Bowlen Building,
620 - 7th Avenue S.W.,
CALGARY, Alberta.
268-8511

Resource Centre Office,
Faculty of Environmental
Design,
Earth Sciences Bldg.,
Univ. of Calgary,
CALGARY, Alberta.
284-6815

Calgary Public Library,
616 Mcleod Trail, S.W.,
CALGARY, Alberta.
268-5271

COTTONWOOD
INNISFAIL, Alberta.
227-2493

DELBURNE
Village Office,
Village of Delburne,
DELBURNE, Alberta.
749-3606

DRUMHELLER
Box 1599,
DRUMHELLER, Alberta.
823-5382

EDMONTON
Univ. of Alberta
Extension Library,
On Campus,
EDMONTON, Alberta.
432-3280

Edmonton Regional
Planning Commission,
602, 10025 - 106 Street,
EDMONTON, Alberta.
423-3111

Book Purchase Division,
Edmonton Public Library,
Sir Winston Churchill Square,
102 Ave. and 100 Street,
EDMONTON, Alberta.
429-5351

Documents Reference
Librarian,
Documents Section,
Legislature Library,
216 Legislature Building,
EDMONTON, Alberta.
427-2473

Univ. of Alberta
Science Library,
On Campus,
EDMONTON, Alberta.
432-3785

INNISFAIL
Innisfail Public Library,
INNISFAIL, Alberta.
227-3032

Town Manager,
Town Office,
INNISFAIL, Alberta.
227-3376

OLDS
Olds Agricultural School,
Library,
Olds College,
OLDS, Alberta.
226-3311

Olds Municipal Library,
OLDS, Alberta.
226-6460

RED DEER
Red Deer Public Library,
4818 - 49 Street,
RED DEER, Alberta.
346-4576

Red Deer Regional
Planning Com.,
4910 - 59 Street,
RED DEER, Alberta.
346-3394

Red Deer College Library,
RED DEER, Alberta.
346-6450

Agricultural Building,
RED DEER, Alberta.
343-5310

ROCKY MTN. HOUSE
I.O.D.E. Public
Memorial Library,
Town Office,
ROCKY MTN. HOUSE,
Alberta.
845-2110

LACOMBE
Parkand Regional Library,
Box 1000,
LACOMBE, Alberta.
782-3850

Lacombe Public Library,
LACOMBE, Alberta.
782-3433

STETTLER
Stettler Municipal Library,
P.O. Box 1512,
STETTLER, Alberta.
742-3207

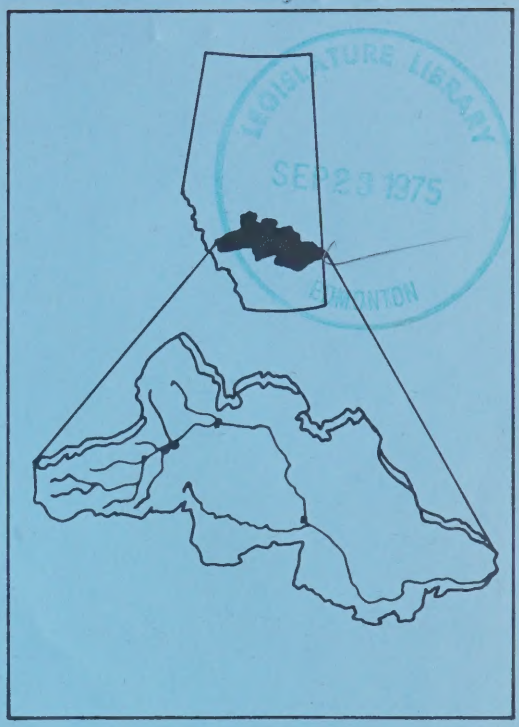
SPRUCE VIEW
Manager,
Spruce View Co-op,
SPRUCE VIEW, Alberta.
728-3209

Room 3,
Stop in Cafe and Motel,
SPRUCE VIEW, Alberta.
728-3508

SUNDRE
Secretary,
Town Office,
SUNDRE, Alberta.
638-3551

For further information contact:

Alberta
ENVIRONMENT
4747 - ROSS STREET
RED DEER, ALBERTA.
PHONE 343-5312



LEGISLATURE LIBRARY
SEP 23 1975
EDMONTON

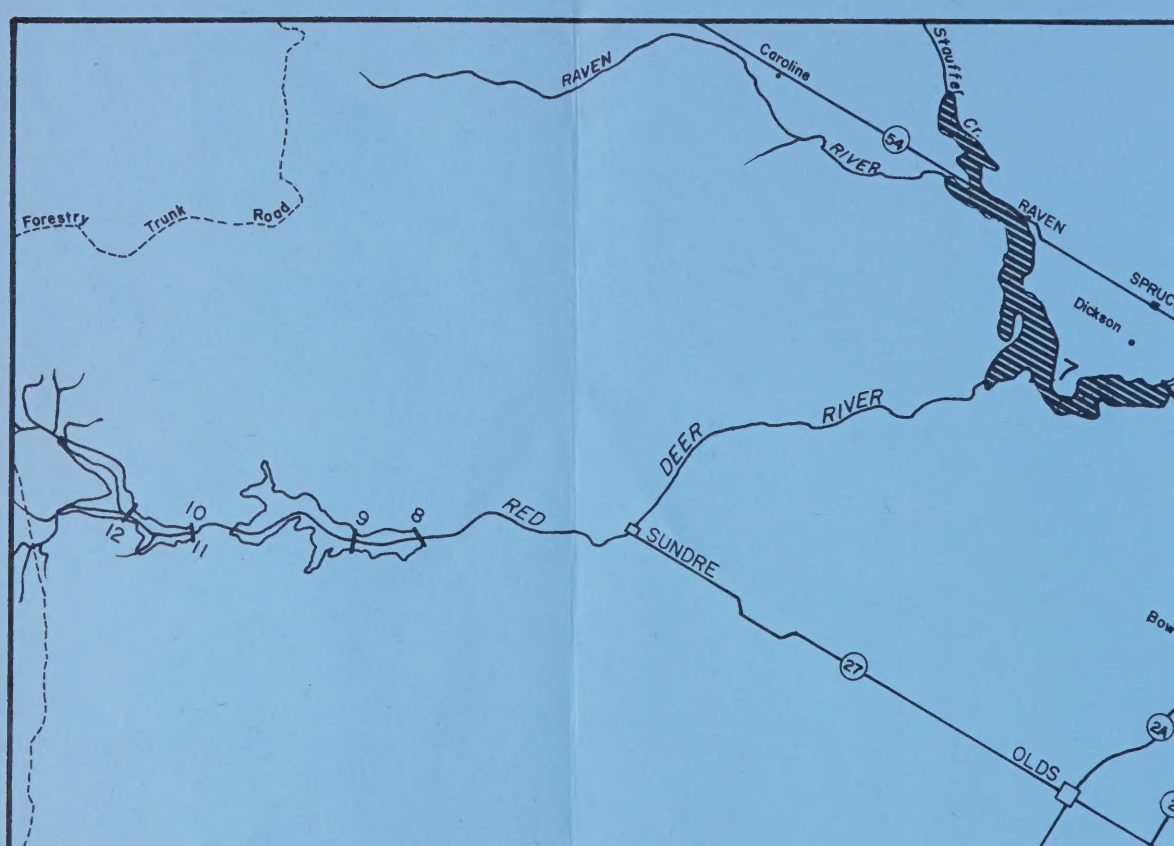
No.1
OVERVIEW

Red Deer River Flow Regulation Planning Study

SUMMARY REPORT

1975

PROPOSED DAMSITE LOCATIONS ON THE RED



Twelve prospective sites for a proposed reservoir were identified along the river upstream from the City of Red Deer. From those twelve, the most promising, Damsite No. 6 and Damsite No. 7, were studied in greater detail. Damsite No. 6 is located approximately midway between the confluences of the Red Deer with the Raven and Medicine Rivers. Damsite No. 7 lies approximately two miles below the mouth of the Raven River and about seven miles upstream
the two damsites arrive
estimates for each site
each of the reservoirs
vironmental and social
site were also studied
those studies may be
dealing with each part

DEER RIVER

om Damsite No. 6. Studies on
at preliminary designs and cost
and also analyzed the ability of
o regulate the river. The en-
mpacts to be expected at each
and compared. The results of
ound in the summary reports
ular subject.

WHY A DAM?

One of the aims of the Government of Alberta is to stimulate the economy and development of the rural and smaller urban centers in the province by decentralizing industrial and population growth. The resources available within the Red Deer River Basin, as well as its location between Edmonton and Calgary, make it an excellent area for increased industrial and population growth. One shortcoming of the basin, however, lies in the amount of water available in the Red Deer River during the winter.

Although the Red Deer River normally provides enough water during the summer for the needs of the increased population and industry; the river does not provide enough water during the winter to meet the requirements of an increased industrial base. Consequently, the Red Deer River Flow Regulation Planning Study was initiated to examine the possibility of regulating the river to provide the necessary water.

Regulating a river would mean that water, which normally flows down the river during the spring runoff, is saved and released during low flow periods. Using this method, an averaging effect on the river is created where high spring flows are reduced, and low winter flows are increased.

With the use of a dam, the Red Deer River could be regulated to provide a reliable year round supply of water for present and future industry and population within the basin.

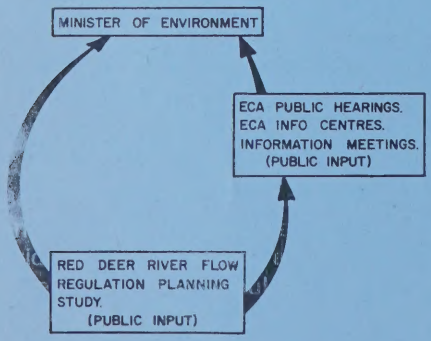
ADDITIONAL EFFECTS OF A DAM

Besides the assurance of a reliable, year-round water supply, a dam would also provide other beneficial effects. The increased winter flows would tend to upgrade water quality in the river by raising oxygen levels, and could improve the fish habitat downstream from the dam. Some flood and erosion control will also be gained, and the reservoir could help relieve pressure on the lakes in the region by providing additional summer recreation.

In addition to positive effects, however, a number of negative effects will also occur. Undesirable effects will occur on the local environment and on wildlife in the vicinity of the reservoir. Furthermore, the effects of the reservoir, and the industrial growth that it would stimulate, will change many aspects of the life of the residents of the region.

Depending upon each person's point of view, these effects may be seen as being good or as being bad.

Because of the large number of additional effects caused by the dam, the study team was required to assess the additional positive and negative effects and to recommend what steps could be taken to counteract the negative ones.



PUBLIC INVOLVEMENT IN THE DECISION

A public advisory Committee, composed of representatives from various groups affected by the study, was set up as an integral part of the Red Deer River Flow Regulation Planning Study. The function of the Public Advisory Committee was to provide input into various aspects of the study. In addition, a sub-committee to the Public Advisory Committee was formed to oversee a Public Participation Program on the study. The purpose of the Public Participation Program is to promote public participation into the decision on a dam by augmenting the efforts of the Environment Conservation Authority. As such, it will be sponsoring a number of projects, such as a series of information meetings in various areas, to provide information to citizens and to respond to various other requests.

The Environment Conservation Authority will be holding Public Hearings this fall to obtain the views, opinions, and reactions from the public at large on the dam proposal. The findings of the public hearings, in combination with the findings of the Planning Study will form a major input into the decision.